

CURRICULUM VITAE

Name and Title:

McCarty, Kenneth Scott, Ph.D.
Professor of Biochemistry

Duke University Medical Center
Durham, N.C. 27710

Address:

REDACTED

Academic Discipline:

Biochemistry of Differentiation and Control
Mechanisms of the Metabolism and Synthesis
of RNA and DNA

Parents:

REDACTED

Place and Date of Birth:

REDACTED

Marriage:

REDACTED

Education:

B.S. Georgetown University, 1944
Ph.D. Columbia University College of Phys.
and Surgeons, Dept. of Biochemistry
1958

Positions:

Research Biochemist, Food and Drug Adm., Washing-
ton, D.C. 1944-45
First Asst. to Director of Cancer Research,
Lillia Babbitt Hyde Foundation, Interchem,
N.Y. 1945-52
Consultant Electron Microscopist, VA Hospital
N.Y. 1949-54
Senior Staff Member of Tissue Culture Course,
Cooperstown, N.Y. 1954
Instructor Biochemistry, Columbia University
College of Physicians and Surgeons 1957-59
Consultant to Organon Corp., East Orange,
N.J. 1956-60
Consultant to Parke Davis, Ann Arbor, Mich.
1960-61
Consultant to Microbiological Associates, Inc.,
Washington, D.C. 1962-68
Director of Graduate Studies 1967 to present
Associate Professor of Biochemistry, Duke Univer-
sity 1959-68
Professor of Biochemistry, Duke University
1968-

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Honorary Position:

Senior Staff Member (1) Research Training Program, Duke Medical School (2) Teaching Biochemistry for Medical Students (3) Graduate School, Department of Biochemistry (4) Director of Graduate Studies, Dept. of Biochemistry 1967 to present

Member of Research Council Duke 1970, Chairman for Medical School, 1971

Chairman of the Duke Membership Committee for the Southeastern Section of the Society of Experimental Biology and Medicine, 1960-70 Secretary of the Southeastern Section of the Society Exptl. Biol. and Medicine 1961-62, Secretary to New York Society of Electron Microscopists, Executive Board Director of NYSEM, Vice Chairman Southeastern Section of Soc. Exptl. Biology and Medicine, 1963. Member of Evaluation Committee for Association of American Medical Colleges, 1970-71, Duke representative for Statesman in Medicine for Dr. B. Woodhall 1971.

Societies:

REDACTED

Honorary Fraternities:

REDACTED

Achievements of general interest:

Molecular Biology - Controls of RNA transcription and transport. Developed a procedure for growing mammalian cells under homeostatic conditions using the McCarty Homeostatic Cytogenerator. Developed methods of cell fractionation using the McCarty Cytodisintegrator and specially designed ultracentrifuge. Developed an Osteogenerator for growing organ cultures. Studied the biochemistry of pleuropneumonia like organisms in cell cultures. Investigated the amino acid metabolism of established cell strains. Studied the mechanism of synthesis of messenger RNA. Mechanism of transport of mRNA from the nucleus to the cytoplasm. Synthesis and activity of nuclear ribosomes. Hormone induction of enzyme activity in chick embryo duodenal cultures. Control of protein translation at the ribosome level in the sea urchin egg.

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Areas of Research and
Specialized Knowledge:

Biochemical Investigations of Homeostatic Cell Cultures. Comparison of Biochemical Events with Ultrastructural Morphology (Electron Microscopy). Amino Acid Analysis of Cell Organ Cultures. In vitro Protein Synthesis, Histone fractionation, acetylation and phosphorylation. Hormone induction of histone modification

Contributor:

Experimental Medicine and Surgery, Cancer Research, Science Annals of N.Y. Academy of Sciences, Proc. of Soc. Exp. Biol. and Medicine, American Journal of Pathology, Experimental Cell Research, Excerpta Medica, Journal of Biological Chemistry, Archives of Biochemistry and Biophysics, Analytical Biochemistry, Biochimica Biophysica Acta

Special Grants or
Fellowships:

Damon Runyon Memorial Fund	1958
American Cancer Society	1964-
National Science Foundation	1959-
Center for Study of Aging	1959-
National Institutes of Health	1960-
N.C. Heart	1969-
Orthopaedics Res.	1969-

Special Positions:

1971 - Chairman of Research Council Representing the Medical School, Member of the Curriculum Committee, and Chairman of Undergraduate Education for Medical Students. Medical Student Advisor, Medical Center Curriculum Committee for First and Third Years. Program Director in Molecular and Cellular Aspects of Differentiation.

Special Contributions to:

1. "The Life Sciences - Recent Progress and Applications to Human Affairs, the World of Biological Research - Requirements for the Future". Edited by the Committee on Research in the Life Sciences published by the National Academy of Sciences 1970.
2. "Biology and the Future of Man" by Philip Handler. Oxford University Press 1970, Biological Sciences and the Advancement of Medicine
3. Editor of the Journal of the Tissue Culture Association "In Vitro".
4. Reviewer for journals, as Science, Annals of Internal Medicine etc.

PERSONAL PUBLICATIONS

1973

- McCarty, K.S., Jr., Jones, R., and McCarty, K.S., Sr., Hormone Effects on the Ultrastructure of Mammary Tumor Cultures, Abstract TCA Meeting June 1973.
- Nixon, J., and McCarty, K.S., A Partial Characterization of Phosphorylated Acidic Nuclear Proteins, Abstract TCA Meeting June 1973.
- McCarty, K.S., Sr., Jones, R., Nixon, J., and McCarty, K.S., Jr., Hormone Induction of Phosphorylation of Chromosomal Proteins in Normal and Malignant Mammary Glands in Culture, Abstract FASEB Meeting April 1973.
- Nixon, J., McCarty, K.S., Jr., and McCarty, K.S., Sr., The Use of a Reorienting Density Gradient Rotor with Continuous Sample Flow for the Isolation of Calf Thymus Nuclei, Submitted Anal. Biochem., Jan. 1973.
- Miller, D.M., Williams, R., and McCarty, K.S., Localization and In Vitro Specificity of Histone Acetylation, Biochim. Biophys. Acta, Submitted, 1973.
- Miller, D.M., and McCarty, K.S., Specificity of Acetylation of Histone F2A1 in Normal and Leukemic Lymphocytes and Other Eukaryotic Tissues, Submitted Cancer Research, 1973.
- Miller, R.D., and McCarty, K.S., The Histones of the Clear-Nosed Skate, Raja eglanteria, in preparation.
- Miller, R.D., and McCarty, K.S., The Histones of the Spectacled Caiman, Caimon sclerops, in preparation.
- Sanders, L.A., Schechter, N.M., and McCarty, K.S., A Comparative Study of Histone Acetylation, Histone Deacetylation, and RNA Synthesis in Avian Reticulocytes and Erythrocytes, Biochemistry, 12, 783, 1973.

1972

- Marzluff, W.F., Sanders, L.A., Miller, D.M., and McCarty, K.S., Two Chemically and Metabolically Distinct Forms of Calf Thymus Histone F3, J. Biol. Chem. 247, 2026, 1972.
- Marzluff, W.F., and McCarty, K.S., Structural Studies of Calf Thymus F3 Histone. I. Occurrence of Cysteine, Phosphoserine and ϵ -N-Acetyllysine in Cyanogen Bromide Peptides, Biochemistry 11, 2672, 1972.
- Marzluff, W.F., and McCarty, K.S., Structural Studies of Calf Thymus F3 Histone. II. Occurrence of Phosphoserine and ϵ -N-Acetyllysine in Thermolysin Peptides, Biochemistry 11, 2677, 1972.
- Hopkins, R.A., McCarty, K.S., and Allen, B.L., Serum B-Glucuronidase in Mice Bearing Fibrosarcomas, Orthopaedic Surgery Papers of the Duke University Medical Center and Affiliated Hospitals, Aug. 25, 1972 (Piedmont Orthopaedic Society).

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1972 (continued)

- Sanders, L.A., Marzluff, W.F., Miller, D.M., and McCarty, K.S., Two Chemically and Metabolically Distinct Forms of Calf Thymus F3 Histone, Fed. Proc. 31, 3905, 1972.
- Miller, D.M., Marzluff, W.F., Sanders, L.A., and McCarty, K.S., Specificity of Acetylation of Histones F3 and F2a1 from Normal and Leukemic Lymphocytes, Proc. Amer. Assn. Can Res. 13, 64, 1972.
- Sanders, L.A., and McCarty, K.S., Isolation and Purification of Histones from Avian Erythrocytes, Biochemistry 11, 4216, 1972.
- Marzluff, W.F., Miller, D.M., and McCarty, K.S., Occurrence of ϵ -N-Acetyllysine in Calf Thymus Histone F2b, Arch. Biochem. Biophys. 152, 472, 1972.
- Supervisor of Ph.D. Thesis, Miller, D.M., Characterization of the Acetylation of the Arginine-Rich and Slightly Lysine-Rich Histones. (July) 1972.
- Supervisor of Ph.D. Thesis, Miller, R.D., A Study of the Changes in Histones During Evolution and Development. (August) 1972.

1971

- Hoerz, W., and McCarty, K.S., Initiation of Protein Synthesis in a Rabbit Reticulocyte Lysate System. Biochim. Biophys. Acta 228, 526, 1971.
- Sy, J., and McCarty, K.S., Formation in vitro of a 5.8S-26S Sea Urchin rRNA Complex. Biochim. Biophys. Acta 228, 517, 1971.
- Supervisor of Ph.D. Thesis, Hoerz, W., Initiation of Protein Synthesis in a Rabbit Reticulocyte Lysate System. (Jan.) 1971.
- Supervisor of Ph.D. Thesis, Marzluff, W.F., A Study of the Species Specificity of Histone Acetylation. (June) 1971.
- McCarty, K.S., and Miller, D., Histone Acetylation in Heart Cells in Culture, Presented at Lake Placid, TCA Meeting June 1971.
- McCarty, K.S., Chairman on Histones at Amer. Soc. Biol. Chemists, San Francisco June 1971.
- McCarty, K.S., Protein Nucleic Acid Interactions in the Control of Hormone Induced Transcription in Mammary Tissue Cultures. Invited paper at Gordon Research Conference on Hormones, Aug. 1971.
- McCarty, K.S., Transcriptional Controls in Mammalian Cells. Invited paper at Jackson Memorial Laboratories, Aug. 1971.

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1970

- Sy, J., and McCarty, K.S., Characterization of 5.8S RNA from a Complex with 26S Ribosomal RNA from *Arbacia Punctulata*. *Biochim. Biophys. Acta* 199, 86, 1970.
- Hoerz, W., and McCarty, K.S., In Vitro Ribosomal Subunit Associations in Protein Synthesis using Rabbit Reticulocyte Lysates. *Fed. Proc.* 29, 2000, 1970.
- Marzluff, W.F., Miller, D., and McCarty, K.S., Histone Acetylation in Developing Mouse Mammary Gland in Vitro. *Amer. Assoc. Cancer Res.* 11, 52, 1970.
- Marzluff, W.F. and McCarty, K.S., Two Classes of Histone Acetylation in Developing Mouse Mammary Gland. *J. Biol. Chem.* 245, 5635, 1970.
- Wilhelm, J.A., and McCarty, K.S., Partial Characterization of the Histones and Histone Acetylation in Cell Cultures. *Cancer Res.* 30, 409, 1970.
- Wilhelm, J.A., and McCarty, K.S., The Uptake and Turnover of Acetate in HeLa Cell Histone Fractions. *Cancer Res.* 30, 418, 1970.
- Supervisor of Ph.D. Thesis, Sy, J., Characterization of Sea Urchin, *Arbacia Punctulata*, Ribonucleic Acids. (June) 1970.

1969

- Hoerz, W., and McCarty, K.S., Evidence for a Proposed Initiation Complex for Protein Synthesis in Reticulocyte Polyribosome Profiles, *Proc. Natl. Acad. Sci.* 63, 1206, 1969.
- Marzluff, W.F., McCarty, K.S., and Turkington, R.W., Insulin-Dependent Synthesis of Histones in Relation to the Mammary Epithelial Cell Cycle. *Biochim. Biophys. Acta* 190, 517, 1969.
- Sy, J., and McCarty, K.S., Characterization of "7S" rRNA of *Arbacia Punctulata*, *Fed. Proc.* 28, 726, 1969.
- Hijmans, J., and McCarty, K.S., Effect of Hydrocortisone on Chick Duodenum Cultured in Chemically Defined Medium. *Proc. Soc. Exptl. Biol. Med.* 131, 1407, 1969.
- Supervisor of Ph.D. Thesis, Wilhelm, J., Partial Characterization of Histone Acetylation in HeLa Cells. (Mar) 1969.

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